OPPORTUNISTIC CPU FUNCTIONAL TESTING WITH HARDWARE COMPARE

ABSTRACT OF THE DISCLOSURE

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One embodiment disclosed relates to a method of providing CPU functional testing. Operations are executed on multiple functional units of a same type in the CPU. The outputs of the multiple functional units are automatically compared. The results of the comparison are checked only for

10   redundant operations. Another embodiment disclosed relates to a microprocessor with built-in functional testing capability. The microprocessor includes multiple functional units of a same type and registers that receive outputs from the multiple functional units. In addition, comparator circuitry is built-in that also receives the outputs from the multiple functional units and

15   compares the outputs to provide functional testing.